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SCIENTIFIC PAPERS.

SUMMER BIRDS OF SHAW'S GARDEN.

BY OTTO WIDMANN.

During the summer of 1908 the writer noted on twenty visits to the Missouri Botanical Garden forty species of birds occurring under such circumstances that he is entitled to regard them as breeders in the Garden, although actual proof was not forthcoming in every case. Six species are classed as more or less regular visitors from near-by breeding grounds. This number does not include the score or more of transient visitants which in their bi-annual passage through our region stop at the Garden for a short time in spring and fall, nor those northern guests which come to us in fall, spend the winter with us, and leave us again in spring.

The total absence of those species which make their nests in old woodpecker holes or in natural cavities in trees is accounted for by the lack of nesting accommodations. Suitable bird boxes placed in different parts of the Garden would undoubtedly attract the Bluebird and the Purple Martin, probably also the Tufted Tit, Chickadee, Bewick's Wren, Great Crested Flycatcher and Screech Owl, all of them species which have begun to modify their old way of nesting by accepting artificial nesting sites. House Sparrows, which are likely to take possession of bird boxes intended for Martins, can easily be trained to let them alone by allowing them to hatch their eggs, but robbing them of their young ones before they are able to fly. Such bird boxes become at once abominable to the Sparrow tribe and are severely left alone. After the Martins have built their nest and begun to lay eggs Sparrows are kept off by the Martins themselves.

The Bluebird, feeding mainly on the ground, prefers a box not more than eight to ten feet from the ground, while the



EUROPEAN TREE AND HOUSE SPARROWS.

House Sparrow does not care much for a nesting site so low down and easily reached by his greatest enemy, man. For Wrens, Chickadees and Titmice boxes with holes not more than $1\frac{1}{4}$ -inch in diameter will do, while for Bluebirds and Martins $1\frac{1}{2}$ to 2-inch holes are required, and for Screech Owls $2\frac{1}{2}$ -inch.

Too large a number of Bronzed Grackles and Blue Jays should not be tolerated, because it has been found that, where these species abound, very few tree-nesting birds of smaller size are reared, and in consequence such places are soon deserted by the smaller birds, among them some of our best songsters.

That the nest robbing boy is busy in even such sacred places as Shaw's Garden is evidenced by the fact that nests, known to be with nearly fully grown young one week, had been entirely removed the following week. The numerous hedges of dense shrubbery in the new part of the Garden, devoted to the North American Synopsis, have induced several species formerly little known in the Garden to nest therein, among them Bell's Vireo, Yellow Warbler, Maryland Yellowthroat, Chat, Traill's Flycatcher and Indigo Bunting. The meadow has attracted several pairs of Meadowlarks and Quails and the lake invites not only the Kingfisher to frequent visits, but also numbers of Swifts and Martins, which like to hunt over water when on cool days flying insects are scarce elsewhere. The ripening mulberries are an attraction for flocks of Cedarbirds in early June and the many beautiful flowers charm numbers of Hummingbirds later in summer after they have finished their domestic duties in other less frequented places.

Denizens.

QUAIL OR BOB-WHITE. *Colinus virginianus*.

From the first of May to the last of July the Bob-White is one of the birds oftenest heard, but seldom seen. It is at home in the Garden all the year round, but the loud, clear whistle "bob-white" is only heard during the breeding season. In winter we meet with a covey of a dozen or so in quiet places, where we may see them cross our way, one walking

behind the other from cover to cover, or coming upon them suddenly we may be startled by the loud whirring sound which they make when all take wing at once. Pairs are noticed in April and eggs are laid in May, but the cutting of the grass and weeds is likely to disturb them or, by ruining the already commenced brood, force them to make another attempt in some quiet spot.

The well-known Quail is a very handsome bird of a much variegated coloration, a reddish brown varied with black and white as the leading colors; the female is somewhat smaller with the general coloration subdued, less black and the white less pure. As the Quail is not only a handsome bird, but also a very beneficial one, destroying numbers of injurious insects in all stages of development all the year around, it deserves all the protection the farmer and gardener can give it.

MOURNING DOVE. *Zenaidura macroura*.

One pair of these lovely creatures made its home within the confines of the Garden. The doleful cooing of the male is one of the first sounds of Nature in early spring and is continued with more or less frequency throughout summer. The gentle and familiar Dove likes to nest near human habitations, knowing that good people are the best protection against its many enemies. The Doves of St. Louis and surrounding country have a particular liking for park-like gardens, where Spruces afford them secure nesting sites before deciduous trees become leafy enough to hide their frail structure. Arriving already paired about March 25, the peculiar far-reaching love-notes coo-coo, coo-coo betray their presence at once and the graceful airy evolutions of the playful birds are a fine treat to the Nature lover.

If the weather permits, arrangements for the first brood are made early in April and the one or two young ones leave the nest about the first of June, when preparations for a second brood are made. It seems that three broods are sometimes attempted, as nests with eggs have been found late in August and September, but as a rule Doves have deserted their breeding grounds by the middle of August, retiring to the wheat

stubble, where they pick up waste grain, but chiefly seeds of wild grasses and weeds with which the fields are rapidly overgrown after the grain has been removed.

SCREECH OWL. *Megascops asio*.

On its twilight excursions after beetles, moths, katydids and similar favorite dishes the Screech Owl appears on summer evenings on the lawn in front of Dr. Trelease's residence, much to the amusement of his family. Its soft doleful notes belong to the most delectable sounds in Nature and have nothing of the discordant screams, for which other members of the Owl family are renowned. Its name is, therefore, one of the many misnomers, for which we have to thank the early settlers, who instead of giving new names to the new birds of the New World applied names of European birds in an arbitrary, and often inappropriate, manner. Quail, Partridge, Pheasant, Robin, Redstart, Tree Sparrow, Meadowlark are some of these appellations, but Screech Owl is the most offensive.

These active little owls are excellent mousers and should therefore be protected and not destroyed, as they often are by misinformed or ill-willed persons, who take pleasure in magnifying the faults of their fellow-creatures in order to justify their desire to destroy. They may be attracted to a place by putting up suitable bird-houses, in which they can build their nest and hide in daytime and make themselves at home all the year round, being permanent residents in our region.

YELLOW-BILLED CUCKOO. *Coccyzus americanus*.

This is the common Rain Crow of our region. Its queer notes are often heard in sultry weather, but if the gardener were to rely on its prophecy of rain, his plants would suffer irreparable damage.

During the summer of 1908 its voice was one of the common sounds in the Garden; it was given in full with a long series of clucks and caws at the beginning of summer and in an abbreviated form in July, short cow-caws which may be mis-

taken for the notes of the Mourning Dove at a distance. But the Cuckoo of the Garden was not only a voice, it was also a common sight, as, contrary to its reputed aversion to long flights over open ground, its long-tailed, slender form was frequently seen gliding from one part of the Garden to another. Though its body is not longer than that of a Robin, its two and one-third inches longer tail brings its whole length nearer to that of a Dove, for which it might be mistaken at times. Its glossy white underparts in sharp contrast with the brown upper parts are good marks for recognition and the peculiar outline of the bird on wing, together with its straight swift flight, distinguish it at once from all other birds of similar size.

Since hairy caterpillars are its favorite food, there is no more useful bird in the Garden than the Rain Crow, though its promises of rain may not always be fulfilled.

BLACK-BILLED CUCKOO. *Coccyzus erythrophthalmus*.

While the Yellow-billed Cuckoo is by far the more common of the two species in this section of the United States, a pair of Black-billed Cuckoos also chose the Garden for a summer abode.

At first sight the two species resemble each other closely in shape, color and size, the small difference of half an inch in the length of this smaller species being hardly perceivable, but even in flight the Black-billed can be distinguished from the other by the absence of the cinnamon color of the wings, which in this species are glossy brown like the back. Seen from below the Black-billed has very little white at the tips of the brown tailfeathers, while the Yellow-billed shows conspicuous white patches on the end of the black tailfeathers. In good light the color of the bill tells the species easily apart, but it is only the lower mandible which is yellow in the one and black in the other, while the upper is black in both. The red color around the eye in the *erythrophthalmus* is visible only with a field glass. In fall the young of the year are not quite so easily distinguished, all characteristics being less apparent, especially the marks on the tailfeathers and the

color of the wings. In calls and general behavior, in food and nesting habits there is but little difference except in the eggs, which are smaller and darker blue in the Black-billed. Both species arrive from the winter quarters about the first of May and withdraw at the same time, about the first of October.

RED-HEADED WOODPECKER. *Melanerpes erythrocephalus*.

The Woodpecker family is sparsely represented in the Garden during the breeding season. The Downy and the Hairy visit the Garden in winter and the Yellow-bellied Woodpecker in spring and fall, but the beautiful Redhead and the hardly less showy Flicker are the only summer guests and even these are not as plentiful as one would wish. Both species seek the friendship of man and deserve it not only from an esthetic point of view, but also from that of utility. The Redhead may go for a little fruit in the orchard, especially cherries, but it deserves every one by its great help in keeping down injurious insects. Red, white and black, in large pattern, is the festive garb of the Redhead and a jolly good fellow it is, always ready for play and frolic. Sometimes it beats the drum a little too early in the morning on the roof of our suburban homes, but we readily forgive the disturber when we see how much confidence he places in us by chiseling his nest hole fearlessly where all can see it.

A few winter with us, but the great mass comes to us about April 20, when after a favorable night their long-forsaken old haunts are populated again and their loud guttural croaks are heard everywhere. As mysterious as their arrival in spring is their departure in fall, when about the middle of September their haunts are deserted, though the day before Redheads were as numerous and noisy as ever.

NORTHERN FLICKER. *Colaptes auratus luteus*.

Few birds are better known than the Flicker. This is proved by the many common names by which it is known to different people. Some call it High-holder or Yellowhammer,

others Pigeon Woodpecker, and the books have it as Yellow-shafted, Yellow-winged and Golden-winged Woodpecker.

Fortunately the Garden harbors two pairs of Flickers and from their return to us in March till July their several calls, love and alarm notes, were among the sounds most commonly heard. Neither in feeding nor in their ludicrous courtship did the pretty birds in the least endeavor to evade observation, allowing near approach. Such a behavior is much at variance with that in places where shooting is going on, as for instance around Creve Coeur Lake, where Flickers have learned that constant vigilance is the price of liberty and life, and where you see the poor birds at ease only on the highest tree tops. Ordinarily Flickers feed mostly on the ground, their favorite food being ants, but beetles, weevils, grasshoppers and other insects constitute part of their diet, mixed with some vegetable food in the shape of wild fruit, grass and weed seeds. Since ants are a pest in a garden, protecting and spreading the destructive aphids or plant lice, the Flicker's activity is very welcome. The Flicker is too well known to need description, but it may not be amiss to say that it may easily be known even at a great distance by its white rump.

CHIMNEY SWIFT. *Chaetura pelagica*.

Though not frequently seen to enter chimneys on the premises, Swifts are in the air above the Garden most of the time from their arrival in April till their departure in October. They are attracted to the place by the trees among which many insects find shelter in cool, rainy or windy weather. Being on the hunt all the time, they are good indicators of the whereabouts of winged insects; on warm, calm days, especially in sultry weather and before a storm they are circling at great heights; on windy days and after rains we see them fly low over the ground, and when the air is too dry and cool over the land, they join the Swallows over the water. Except during incubation we seldom see one Swift alone; they are very social birds and their great power of wing allows them to indulge their social tastes to a great extent and yet find enough

to eat. Unlike short-winged birds which require a certain domain to furnish the needed amount of food for themselves and young, and for that reason have to separate more or less according to the nature of their food and home, the long-winged birds can live all the year around in large companies and still find enough food, for they can in a short time travel great distances to procure it. Many whose nesting habits allow it, breed even in large colonies, but the Swift can not do it, because his former nesting in hollow trees and his present occupation of unused chimneys do not permit the presence of more than a few nests together, as for the sake of cleanliness they do not build their small saucer-shaped nests one directly below another. But as soon as the young can fly, many families use one chimney for a common roost, and when migration begins their numbers are swelled by transients forming aggregations of several hundreds, all entering one chimney for rest and sleep.

KINGBIRD. *Tyrannus tyrannus*.

Among country people the Kingbird is one of the best-known birds, because it likes farm land, where fields, meadows and pastures are beset with clusters of trees and where ponds or creeks are not far off. In the Garden, the new part with its meadow and lake attracted a pair of this eminent member of the Flycatcher family, and much of its animation was due to the strange twittering notes and the peculiar hovering flight of this pair. Nearly of the size of a Robin, but black above and white beneath, the Kingbird can easily be identified when perched upon some favorite prominence, and the white tips of its tailfeathers are a good mark for recognition when in flight.

Farmers who are wise protect these birds, not only because of the flycatching quality, but for the good reason that it is a protector of his fowl, assailing and driving off any hawk and crow which makes its appearance in the neighborhood. Foolish people call it Bee Martin and kill the poor bird, because they see it sometimes near their bee-hives, believing that it eats many bees, but careful investigation has shown that this

is a mistake. Out of 281 stomachs only fourteen contained bees, and of the fifty bees found therein forty were drones; only four working bees were positively identified, the rest being too much broken up to tell the sex. But fourteen robberflies, enemies of the bee, were also found in these stomachs, more than enough to make up for the few working bees.

CRESTED FLYCATCHER. *Myiarchus crinitus*.

While the Kingbird chooses the open land where trees are not plentiful, this member of the family prefers the forest and more or less open woods. In the Garden a pair is making its home in the arboretum, where for two months, May and June, its loud, harsh voice greets the visitor at all times of the day. About the size of a Robin, the originator of the queer notes is easily discovered, and even if the bird should leave its perch to elude a closer scrutinizing of its green coat and yellow waist below a pearl-gray throat, a glance at its rusty tail suffices for identification. During the mating period and when in search of a serviceable cavity for a nest, the interesting pair is easily watched, but after the nesting site has once been selected and nidification begun, it becomes more and more secretive and takes pains not to betray the whereabouts of its offspring. Often mentioned in books, and deservedly so, is a peculiarity which this species shares with others of its genus in subtropical and tropical America, namely the use of snake skin in the make-up of its nest. Covering the eggs with it during temporary absence, the intention is undoubtedly to hide the eggs and scare intruders by the make-believe that the hole is the home of a snake.

WOOD PEWEE. *Contopus virens*.

The Pewee is originally a true woodland bird, but unlike other denizens of the forest which disappear entirely with the forest, it has long ago begun to accept the condition that civilization imposes and is now putting up with substitutes such as parks, cemeteries, and even large orchards.

Fortunately, one pair is content with an abode in the more densely wooded part of the Garden, the arboretum. For most

people the Pewee is only a voice, as it is a somber looking bird of the size of a sparrow, very dark greenish above and dull yellowish white beneath, and appears seldom in the open, doing its flycatching chiefly amidst the branches of trees; but its voice is something unique, a long-drawn pewee with the accent on the second syllable. This genuine woodland note is heard throughout summer, often when all nature seems to be asleep in the noon heat of the dog-days, and at dusk long after most other birds are at rest. Like all other members of the Flycatcher family the Pewee belongs to the most beneficial inhabitants of any place, because, living almost wholly on winged insects, it never touches any cultivated fruit. Unfortunately its beautiful moss-covered, saucer-shaped nest, saddled on a horizontal bough and well out of reach of enemies below, is too easily accessible to tree-inhabiting nest robbers, and this may be the reason why they are never plentiful in places where Squirrels and Blue Jays abound.

TRAILL'S FLYCATCHER. *Empidonax trailii*.

Every species of bird has a preference for a certain kind of surrounding wherein to make its home. Many choose the deep forest, some the edge of the forest or clearings, others select open country where trees stand far apart or in scattered clumps. Some want meadows with or without trees, some want them dry, others wet; some are found only in the immediate vicinity of water, others never very far from it.

Traill's Flycatcher is one of the birds that like low trees and shrubbery near water in partly open country, and is never found in the forest which it leaves entirely to a very near relative, the Acadian Flycatcher. In the Garden one pair has made its home in the arboretum along the creeklet, and two pairs in the new part, the North American Synopsis, which with its large pond and clear running water makes a perfect home for this and several other species. It requires quite a little watching to become acquainted with Traill's Flycatcher, for, though not very shy, it escapes notice easily on account of its unassuming dress and quick movements. The only time when we cannot help noticing it is when, perched on some

eminence, it utters its loud peculiar whittichee, a note unlike any other bird's song and therefore easily remembered when once known. As this note serves as its song, it is only given during the breeding season and ceases about the middle of July, after which time only a short whitt is heard and the bird seldom seen, removing with its young ones to the most retired places.

BLUE JAY. *Cyanocitta cristata*.

Rather strangely, Blue Jays are seldom seen in the Garden except during their migrations in spring and fall, and one pair only chooses it for a summer home. Blue Jays are quite an ornament to any park, but their presence during nesting time does not seem to be good for the smaller birds. The scarcity of these in our large cemeteries in the northern part of the city may be accounted for by the large number of Blue Jays and Squirrels in those places. Fortunately there are no Squirrels in Shaw's Garden, and it is hoped none will be allowed in it, but the number of Blue Jays and Bronzed Grackles should always be kept limited to a very few pairs during breeding time. There are very few people who have actually witnessed an attack of a Blue Jay upon eggs or nestlings of small birds, but the fury with which such birds are often seen to chase Blue Jays from the vicinity of their nests and the bitter complaints we hear after such visits permit the surmise that the perpetration of such crimes is not rare. At all other times save the breeding season, and particularly so in winter, the vivacious fellow in his fine livery is welcome everywhere, especially in the Garden, which is almost entirely deserted by birds from November till March. He has a variety of notes, which are used to best advantage when he detects a hawk or owl. On sunny days in cold winter owls like to come out of their holes to enjoy the warm rays of the sun, but there is not much enjoyment left after a Blue Jay has discovered his owlship. The news is spread in a minute and the Jays of the neighborhood respond promptly; soon the tree is full of Jays and the air full of their vociferations; the best thing the poor owl can do is to go back into its hole.

CROW. *Corvus brachyrhynchos*.

Adjoining the arboretum and forming a part of the Shaw estate is a large pasture. Crows like pastures, especially when they are next to a piece of timber with trees large enough to hold their nest. The arboretum has some stately trees of different kinds where a pair of Crows can hide a nest and raise a brood of youngsters without molestation. Although bulky, their nest is placed in such a happy way that it does not readily strike the eye of the passer-by. Crows are very clever in avoiding betrayal of their nest; at other times noisy and even boisterous, they are silent about their domestic affairs, so much so that during the period of incubation they seem to have left the neighborhood entirely. Even when feeding young, not much is heard or seen of them until the young have left the nest and are able to fly, when for several weeks the clamor of the ever-hungry youngsters announces the fact that the maligned bird has succeeded in raising a brood in spite of universal persecution. Farmers accuse the black visitors to their fields of pulling corn and stealing hens' eggs, but most of them admit that they have no proof of such misdeeds themselves, only hearing it from others and seeing the birds on their field in corn-planting time. That Crows sometimes rob birds' nests of their eggs has been attested by eye-witnesses, but whether this is a trait of the whole race or only of individuals has not been definitely settled. Because some blacks are thieves, it would be unjust to take it for granted that all are thieves.

COWBIRD. *Molothrus ater*.

April, May and June are the months when Cowbirds visit the Garden. The first few days after their arrival from the south solitary males are seen flying over or alighting on the highest tree tops, scanning the surrounding country and after uttering a few times their peculiar guttural song-notes disappearing as suddenly as they had come. A few days later small parties composed of two or three males and one or two females take the place of the solitary males. These little

companies keep together, roaming through the country, courting and contributing to the amusement of Nature lovers by their grotesque attitudes and queer gestures as well as by their strange utterances. In May and June, while still conspicuous roamers and frequenters of the same places as before, they are also met with singly or in twos, a male accompanying a female, moving stealthily through the lower branches of trees or through underbrush in search of a depository for their eggs. Later in summer young Cowbirds are sometimes seen being fed by other birds, but the old Cowbirds do not care what becomes of their eggs after they are trusted to the care of some warbler or other songster. Having finished their task of oviposition the old Cowbirds leave the grounds entirely and withdraw to farmland, over which they rove in flocks in search of food, being joined by the young ones when able to fly and to take care of themselves. These flocks retire southward in October, but small parties and single individuals remain with other Blackbirds into and sometimes through winter.

MEADOWLARK. *Sturnella magna*.

One of the most valuable constituents of the avifauna of the Garden is the handsome, cheerful Meadowlark, several of which persevered on the meadow of the Synopsis in spite of repeated grass cuttings and the attendant destruction of their nests. Though feeding entirely on the ground where they are easily overlooked, they have the praiseworthy habit of flying up to some eminence, sometimes to the highest tree top, to give vent to their somewhat harsh but not unmusical song. Besides this song of the male, both sexes have a loud chatter, apparently an expression of exuberant joy, frequently given, especially in the Garden, where they enjoy a protection which they do not find everywhere, as the poor bird is still regarded as a game bird in spite of Audubon societies and prohibiting laws. Doing no harm in any way and living almost entirely on insects, and being with us from February till November, the farmers and horticulturists ought to do all they can to preserve the bird as one of their best allies in the war against insect pests. In spring and fall the

pasture in the rear of the Garden is a favorite retreat for large troops of migrating Meadowlarks, and their cheery song and low chatter may be heard before the last snow of winter has disappeared as well as on cold gloomy days before their departure in November and after all other summer birds are gone. On farm land protected from the pot-hunter some Meadowlarks brave the rigors of our winters, but the great mass goes to the Gulf states, where they are found not only on cultivated land, but also in the open pine woods, keeping company with the Bobwhites, Bluebirds, and others usually associated with cultivated land only.

RED-WINGED BLACKBIRD. *Agelaius phoeniceus*.

The male Red-winged Blackbird with its bright red epaulets upon a deep black dress is an ornament to every surrounding, and we are fortunate in having a few pairs of them breeding in the Garden. They make their nests always near water, preferably on swampy ground, and are therefore often called Swamp Blackbirds. There is not much ground of a swampy nature in the Garden, but a pond in the arboretum answers the purpose, and it is there that the "concuree" of the just returned old Mr. Redwing greets us about the middle of March. During the first few weeks his voice may be heard only for a short time in the morning, as he comes only to tell us that he intends to be back on his old breeding ground for another season. His social nature calls him back to his comrades in the bottomland to feed and roost, and during wintry spells he may not show up for several days; but with the return of pleasant weather he will make up for lost time and sing his concuree with vim from morning till night. He may now be joined by a few other males, also promising to stay, but his mate does not join him until the swamp vegetation has made such progress that there is a safe prospect of enough cattail and similar plants wherein to hide her nest. Male Redwings are ardent lovers, and it is due to the prudence of the female that broods are not attempted before the season is so far advanced that she can hope for success in the rearing of her only brood of three or four youngsters. During the mating season,

which is at its height about the first of May, males and females are both very conspicuous and noisy, the latter with a loud peculiar note which is often uttered while on wing. After the nests are built and incubation has begun, the female becomes more and more retiring, but the male keeps up its concuree while watching over the environs of his nest. Trespassers are met with loud, screaming notes of alarm and, when incubation is advanced or young ones in the nest, he becomes bolder and circles above the head of the intruder in a menacing way. If no accident happens to the nest, in which case a second attempt will be made, the young of an old pair can be on the wing before the end of June, but the offspring of young pairs, which go to housekeeping several weeks later than the old folks, may not be able to leave the nest before the end of July. A family of Redwings was still present in the Garden in early August, but as soon as the young are able to fly well and have learned to find their own food, all say good-by to the Garden and do not frequent their breeding haunts again till the following spring.

ORCHARD ORIOLE. *Icterus spurius*.

For vivacity of song and sprightliness of manners the Orchard Oriole takes the palm and although only one pair graced the Garden with its presence in the summer of 1908, the eastern part of the Synopsis was resounding with the far-reaching peculiar song from early in May till the first of July, when demands of the clamoring young took up all the time of both parents, leaving none for song. Unfortunately the stay of Orchard Orioles on their breeding grounds is a very short one, as they desert them as soon as the young are fully grown and able to follow their parents, roaming through the country in search of their favorite wild cherries, wild grapes and similar delicacies which make up their chief diet before their departure in August. Orchard Orioles which we hear singing in July are usually males of the second year, *i. e.* not more than one year old, easily distinguished, because wearing an entirely different dress from the black and chestnut livery prescribed for the older gentlemen. A black patch reaching from bill

to breast is the only mark by which we can tell a young male from the uniformly green and yellow female, but these green youths breed in this plumage and raise a family the same as the black and chestnut older males, only a little later in the season. Although there is a certain characteristic timbre, by which we can easily tell an Orchard Oriole's song from that of any other bird, every individual songster has its own peculiar melody, by which we are able to distinguish individuals so well, that it is even possible to recognize them again in following years.

BALTIMORE ORIOLE. *Icterus galbula*.

One excited, love-sick Baltimore can fill acres of suburban ground with his shrill, impatient whistle, which is uttered with wonderful diligence and perseverance until he has found an affectionate partner, when his notes lose much of their wildness and become at times a mellow love song of real beauty. No one with eyes to see and ears to hear can long remain unacquainted with this strikingly beautiful bird in its unique attire of bright orange and deep black. The Baltimore is a great favorite with country people and knows it and repays kindness and good will by building its nest, a pendulous pouch of six or more inches in length, from the extremity of a swaying branch as near as possible to the farm house, often in the very tree which shades the yard. So well constructed are these nests and so firmly attached that they are usually hanging throughout winter, but never used a second time. In the weaving of the nest, which is the work of the female alone, vegetable fibres of great strength are used, taking them from different plants according to locality, also accepting such material as thread, twine and braid and interweaving them with the natural filaments. In the Gulf states southern moss (*Tillandsia*) is sometimes used exclusively. At Old Orchard several generations made their nests entirely of horse hair, very beautiful fabrics and of great strength, remaining in the trees for years until the holding twigs were broken off by storms. With increasing family cares Baltimore songs give way to mere chatters and calls and are soon

replaced by the clamor of the hungry brood, begging continually for food. With their silence we find that the whole family has departed and the species almost entirely disappeared until migration begins in August, when at rare intervals their beloved voice greets our ear again and shy birds are seen flitting from treetop to treetop.

BRONZED GRACKLE. *Quiscalus quiscula aeneus*.

A few Bronzed Grackles walking on the lawn, busily engaged in feeding, are certainly objects of real beauty and elegance. It needs no direct sunshine, even diffused light reveals a splendor of color not easily surpassed. The head and neck are a rich, deep prussian blue with a violaceous gloss, which changes in places to a green metallic iridescence. This exquisite coloration is abruptly defined against the intense golden bronze of the back; wings and tail are purplish black. Its slender form is admirably proportioned and well balanced by the long, broad tail; its walk is graceful and its carriage elegant to a degree. The expression of its yellow watchful eye bespeaks the owner of more than ordinary intelligence, and whoever has kept one as a pet will bear witness that this is true. With kind treatment it becomes remarkably tame, and being docile can be trained to enjoy the freedom of house and garden, and be a source of much amusement to the family. In the wild state, too, it easily comprehends whether it is liked or not, and becomes truly confiding where not molested, while it is one of the shyest, most wary birds where persecuted. A small colony of them finds an asylum in the arboretum and contributes largely to the life of that part of the Garden from the latter part of March till July. The time of courting and mating is the period of their greatest conspicuousness. Filling the air with their squeaky voices and chasing each other, often two or three males after one female, they act as if they were the sole owners of the place until all are paired and nidification becomes their all absorbing occupation. It is at this time that people are apt to call them boat-tailed, for, when on wing, the excited male carries its long tail folded upward from the middle, causing the semblance of a keeled boat.

AMERICAN GOLDFINCH. *Astragalinus tristis*.

In late summer and early autumn, when some of the summer sojourners have left their breeding grounds and the remaining ones are all more or less elusive, the Goldfinch plays a prominent part in the bird life of the Garden. Goldfinches are notoriously late breeders, and it is only about the middle of August that their three or four young ones are ready to accompany their parents to the inviting beds of seed-bearing composites, so plentiful in the Garden. Two families, reared on the premises, had their headquarters in the arboretum and Synopsis throughout September and October and felt so much at home that they paid little attention to visitors, keeping unconcernedly at their task of removing akenes from receptacles within a few feet of the observer. They even invited attention by uttering their pleasing canary-like notes whenever they alighted or changed their perch. Being very fond of running water for drinking and bathing they were often met with at the little brook in the Synopsis. When after the first frost in October the flower beds, which had supplied their favorite food, were cleared, they joined the flocks of ground feeding Juncos and other members of the sparrow family and disappeared with them at the end of the month. Long before their departure the males had changed their handsome black-trimmed yellow livery for a plain brownish traveling suit, not much different from that of the female and young. Roving troops of Goldfinches may visit the Garden temporarily during the winter and flocks of north-bound wanderers will stop over in April and early in May, but it will be June before pairs leave their comrades and begin to look around for a nesting site.

HOUSE SPARROW. *Passer domesticus*.

The House Sparrow is a wonderful bird. Less than two thousand individuals introduced from Europe between 1851 and 1881 have increased to many millions, which have overspread the whole United States from one end to the other. Wherever there are occupied human habitations there is the

House Sparrow, not only along railroads, highways and rivers, but in the remotest settlements. At St. Louis the first were introduced in 1869, a few pairs only, but it seems they have multiplied from the start, as Sparrows were seen in widely separated parts of the city as early as the autumn of 1871 and they had taken possession of the entire city in 1875. Since then, in spite of all persecution and serious adversities, their increase has not been checked and the Garden retains its quota, giving it life and animation in the dreary winter months, when all other birds have deserted it with exception of a few of the hardiest kinds. As no nesting boxes are provided on the premises, they have to build their nests in places where they would not get permission from the director, if they asked for it, as these are built much more for warmth and comfort than for ornament. There are no better parents among birds than the House Sparrows. Although they like society, they still find time to raise two or three broods of four or five young each season. No trouble is too much for them; if their nest is removed this evening, by noon tomorrow it will all be carried back again and this may be done for several days in succession. A Sparrow never deserts its young; should one of the parents be killed, the other will do the work alone; should one of the young fall from the nest before it can fly, it will not be lost, the parents will feed it and see that it gets into a safe place. If one is put in a cage, the mother will feed it for days and weeks, even if she has to enter a room to get to it.

The House Sparrow has several remarkably good qualities, to which it owes its marvelous multiplication and unparalleled spread. Some of its foremost traits, as for instance its reputed egotism and lack of consideration for others, are so human-like and undoubtedly the result of its ages of contact with man, that they have earned for the poor bird the deadly hatred of just those persons who possess these traits themselves in a high degree.

EUROPEAN TREE SPARROW. *Passer montanus*.

This lovely little bird should be known to every St. Louisan not only because St. Louis and vicinity is the only place in

America where it occurs, but principally in order to avoid mistaking it for its cousin, the House Sparrow, to which it has a general resemblance. It has the same reddish brown black-streaked back, but differs from it in having the top of the head a light chocolate instead of the deep gray of the male, or light brown of the female House Sparrow. While the black patch of the adult male House Sparrow covers chin, throat and breast, the Tree Sparrow has a much smaller black spot covering the chin only. But the best mark by which to know the Tree Sparrow is a black round spot on the side of the head, surrounded by the white cheek and therefore easily noticed. The Tree Sparrow is a little smaller and the sexes are alike in coloration, even the young in the nest having the black spots on ears and chin already indicated, while the female and young of the House Sparrow have no black markings about the head and neck at all.

The history of this exclusively St. Louisian species is interesting. During the first ten years after the Civil War it was quite a fad among nature lovers in the United States to attempt the acclimatization of European singing birds; well-meaning persons in all parts of the country imported or bought them from bird dealers and set them free, but, unfortunately, with very poor results as far as St. Louis is concerned. Among a lot of different kinds of birds, such as Chaffinches, Bullfinches, Greenfinches, Goldfinches and Siskins, bought by Messrs. Carl Daenzer and Kleinschmidt, there were twenty European Tree Sparrows. All these birds were liberated in Lafayette Park on April 25, 1870. After a few days all had left the park and nothing was seen of any of them, though sometimes unauthenticated reports came in that this or that bird had been seen at such and such a place. The Tree Sparrows were the only ones found to have taken root in the city, for in the summer of the following year it was discovered that they were quite at home in the vicinity of breweries in the southern part of the city. From that time on their future seemed to be secure; they had no trouble in finding food and nesting sites, were well liked, and spread farther from year to year. But in the meantime their larger cousins, the House Sparrows, which had made their original start from the center of town

and had become more and more abundant, began to invade the domain of the Tree Sparrows, driving them out of their nesting and roosting places, thereby forcing them farther and farther toward the outskirts of the city. In 1878 the invasion of the House Sparrows and expulsion of the Tree Sparrow reached the old city limits at Keokuk street, where the writer lived at that time; but it did not stop there, but kept on until at present there are very few places in the city where the Tree Sparrow survives. Even in the suburbs it has a hard stand against its stronger cousin, but finds sometimes holes which the bigger House Sparrow cannot enter or which do not seem safe enough for him, because too low down. It is therefore easy to understand, how the weaker of the two species became a tree sparrow, being everywhere forced to the trees outside of towns, though both are equally anxious to profit by the advantages which an all year residence near human habitations affords. In countries where the House Sparrow does not occur, as in China, the so-called Tree Sparrow is the regular House Sparrow and in undisputed possession of all towns, large and small. While an increase in the number of the already too abundant English House Sparrow is not desirable, our St. Louis Tree Sparrow needs and deserves all protection we can give, and St. Louisans should severely discriminate between the two species, encouraging the one, discouraging the other. If no discrimination is made and war is waged against Sparrows, it is very likely that the innocent Tree Sparrow is the greater sufferer of the two, because of its strangely confiding ways, trusting to the good will of man instead of fleeing with its much more cunning cousin at the first signs of danger. While it shares the best qualities of its cousin, it is not aggressive and pugnacious against other birds, nor quarrelsome among its own kind, but always gentle and very much attached to each other; its tones, too, are more pleasing and become even musical when concerting in chorus, one of their favorite pastimes. Fortunately, Shaw's Garden has always been, and still is, one of the few places in St. Louis where the Tree Sparrow has found refuge and succeeds in raising a few broods. It would be desirable to see boxes put up for their exclusive use, which could be done by placing

them too low down for the House Sparrow, but inaccessible to cats, boys, coons and other inveterate nest robbers.

CHIPPING SPARROW. *Spizella socialis*.

Before the introduction of the English House Sparrow a Chippy was always a Chippy or Chipping Sparrow, that slender graceful member of the Sparrow family, which made its nest in the nearest vine, shrub or tree in the garden and came fearlessly to the house to pick up the crumbs. Nowadays when we hear city people speak of a Chippy, we do not know whether the real Chippy is meant or the English House Sparrow, most probably the latter. Another name for it is Hairbird, because its pretty little nest is always lined with horse hair, which gives it a neat, clean appearance; but call it by any name it is always the same gentle creature that is well known to most country people for its familiarity and self-complacency in the rendition of its unpretending song. This is of no great value judged from a musical standpoint, but it fills its place well and makes up in quantity for any shortcoming in quality. As the Chippy makes two broods in a season, its song period is not confined to a few weeks in spring as is the case with many other songsters, but performances are renewed in the heat of summer, when its high-pitched ditty is often the only thing heard. As it lives on insects and weed seeds and feeds its young entirely on insects, doing only good and no harm, its extended stay in the Garden from March to October is to be encouraged, and confusion with the less welcome English House Sparrow should be carefully avoided. Only two pairs were found breeding in the summer of 1908, while there would be room for ten times as many in the different parts of the grounds. Wintering in our southern states and eager to return to its breeding grounds as early as possible, it has sometimes to suffer by late wintry spells, and the present general reduction in the number of Chippies can be traced to the abnormally cold spring of 1907.

SONG SPARROW. *Melospiza cinerea melodia*.

For St. Louisans to listen in the summer to the song of a Song Sparrow is a rare treat. Up to the last few years no

Song Sparrow remained to breed in St. Louis, but in 1907 and 1908 one pair made its summer home in Shaw's Garden, and the fine song of the male greeted the visitor almost as soon as he entered. Most birds are in the habit of mounting a prominent perch for the delivery of their song, and our new friend often chose the head of the statue of Juno in the sunken garden, from where he could be heard all over the most frequented part of the Garden. The dense hedges in grandma's garden afforded a safe retreat and hiding place at all times, probably also for its nest.

Large numbers of Song Sparrows come to us from the north in October, stay a few weeks and pass on southward; a small number remains with us all winter, chiefly in river and creek bottoms, where rank vegetation offers shelter and food. In early spring the great mass passes again through Missouri on their way to their breeding grounds in the northern states and Canada, but as breeders Song Sparrows were formerly considered rare even in southern Iowa. It is only in the last decade that it has become evident that the species is slowly extending its breeding range southward. When ten years ago the writer found a pair nesting at Maple Lake, St. Charles Co., Mo., he considered that the most southern locality. Since then he has met with the species twice in the northern part of St. Louis, and lately even as far south as St. Genevieve. Its occurrence in summer in the Garden is therefore of more than ordinary interest and its reappearance in future seasons to be anticipated with pleasure.

TOWHEE. *Pipilo erythrophthalmus*.

Nearly of the size of a robin, this stately aristocrat among the ground sparrows catches the eye of even the most uninterested visitors of the Garden by the showy juxtaposition of its colors, the deep black of head, neck and back, the clear chestnut of the sides and the pure white of breast and belly. Its abrupt and startling note "towhee," with which the male generally introduces himself, is not less striking than his appearance; it is heard at all times during his stay with us from early in March till the end of October, and betrays his pres-

ence scores of times when not a glimpse of him can be had in the dense undergrowth. A softer "t'whee" in answer to his stentorian warnings indicates that his lady is not far away and is aware of the impending danger. His real song, a bell-like note of great strength, is heard only in the breeding season, when, perched on some eminence, usually less than twenty feet above ground, but sometimes on the uppermost branch of a high tree, he is extremely liberal with it for hours at a time. The female, which has the black replaced by brown, is one of the most secretive birds and therefore comparatively seldom seen; but both, male and female, are easily identified, even when trying to avoid a close acquaintance, by the broadly white-edged and white-tipped black tail, spread wide open in their singularly jerky flight. When busily engaged in feeding, which is almost always done on the ground, the loud rustling of dry leaves often announces their presence, and by careful watching we see them jumping up and tossing with both feet the dry leaves backward in order to get at the different forms of insects in hiding underneath. Only one pair located in the Garden this year, but with the increase of shrubbery will come an increase in the number of this desirable songster.

CARDINAL. *Cardinalis cardinalis*.

Of the whole bird population of the Garden there are only four species which might be called permanent residents, *i. e.* of which the same individuals inhabit the grounds all the year round, namely the Bob-white, Flicker, Mocking-bird and the Redbird or Cardinal. Birds of such bright plumage as the Redbird are usually associated with tropical and subtropical climates, and it is therefore a great surprise to many people to see the vermilioned bird contrasting with the snows of our wintry landscape. It is his robust constitution and his faculty to put up with any kind of food, vegetable and animal, which allow him to endure our low temperatures. His powerful bill can crush the hardest seeds and his skill in scratching the floor of his home supplies him with insect food at a time of the year when we might suppose none could be had. He certainly does not seem to suffer from hunger even in midwinter,

for on calm, bright days he cheers his mate with his sweet song, which has such a human quality that we are tempted to answer, but we rather leave it to herself, who, a rare thing among birds, has the gift of song and echoes his whistle in a subdued tone, befitting her subdued colors and modest ways. That well-matched pairs of birds remain paired and together all the year is demonstrated by our Redbirds and other easily observed permanent residents, especially in places like the Garden with only one pair of a kind wintering. Looking searchingly through the bare branches of a thicket we may at first only see him with the bright color, but it will not be long before she of the neutral tints also appears and both seek safety in flight together.

ROSE-BREASTED GROSBEAK. *Zamelodia ludoviciana*.

Beauty of plumage and sweetness of voice are most happily combined in this bird. Deep black and pure white, set off with brilliant rose-carmine on breast and lining of wings, are the pleasing combination of colors, and its song can only be compared with those of the best songsters of all countries. It has a distant resemblance to that of the Robin, but is a continuous, rich, and finely modulated whistle, full of life and gladness, in my opinion the most charming bird song we have. For breeding the Rosebreast likes a locality where different kinds of shade trees, orchards and gardens abound, and is therefore a common denizen of our suburbs; but the best place to make its acquaintance in St. Louis is Shaw's Garden. Soon after the twentieth of April we may expect his return from the tropics, where he spends his winters. His arrival cannot be kept unnoticed long, for, in spring, he does not look for concealment; on the contrary, he shows himself with rare fearlessness and whistles his notes where people can see him. It is his desire to mate which brings him back to us and, coming in advance of his mate, he wants her to find and join him immediately. It is his impetuosity in wooing that makes him such a conspicuous object amidst the multitude of attractions to eye and ear in the luxuriant month of May. The modestly-clad female looks so different from her

showy mate, that one would hardly believe that they belong together. All his fine colors are replaced by brownish streaked with darker, and no trace of the rose color is to be seen anywhere, even the lining of the wing being saffron-yellow.

INDIGO BUNTING. *Cyanospiza cyanea*.

This bird, or rather the male Indigo Bird, is often confounded with the Bluebird, but it is blue all over, while our Bluebird has the underparts cinnamon and white. The female Indigo Bird is entirely brown. Young males in their first spring, *i. e.* not yet fully one year old, are of a queer mixture of blue and brown at the time of their arrival in early May, but, being mature, they breed, and change to the full adult plumage during the summer. The male Indigo Bird is quite a songster, but not a great artist, being too hurried in the delivery to give much expression to his song, which consists only of a few bars. Often even this is too much for him and he breaks off abruptly after the first bar. While it fills well a place in Nature and is rendered with great liberality at times when all other feathered musicians are silent, namely in the noonday heat of midsummer, the monotonous repetition becomes rather tiresome. But, as with all bird songs, there is an astonishing individual diversity, and it requires sometimes close attention even for the trained ear to recognize the originator of the queer strains as our well-known Indigo Bunting. In the choice of location the species is not particular; almost any kind of surrounding will do, as long as it has some shrubbery to conceal its nest, and even this is not absolutely necessary as nests are sometimes placed in trees twenty feet from the ground. In the bird community of the Garden the Indigo Bird is represented by only one pair, but with the extension and growth of shrubbery an increase in their number will undoubtedly follow, as all other conditions for a desirable abode are given. The species is one of the most common and best distributed summer residents in Missouri, and in extent of its breeding range is equalled by few other birds, as it reaches from the Gulf to Canada and from the Plains to the Atlantic. This abundance can perhaps be explained by the protective

color of the female and young and by the fact that two broods are raised, for we see unfledged young in August and sometimes even in September.

WARBLING VIREO. *Vireo gilvus*.

This bird is correctly named; it is a warbler in the true sense of the word, because it really warbles. The birds which we usually call Warblers, namely the beautifully colored members of the family Mniotiltidae or Wood Warblers, have very little musical ability, and not one of them has a song which could be called a warble, *i.e.* a soft, sweet flow of melodious sounds. The name was borrowed by the first ornithologists of this country from the Old World family Sylviidae, of which many members have a clear, sweet, flexible voice. The family Vireonidae, to which our Warbling Vireo belongs, is distantly related to the Shrikes. Vireos are also called Greenlets on account of their plain greenish coloration; all are diligent, voluble songsters, some real artists, and all weave pensile nests, suspended by the upper edge between forks of horizontal twigs. Long after the clever builders have departed for their winter home, their nests are seen hanging in the trees, sometimes in the very tops. While safe from enemies below, these nests are too much exposed to attacks from winged nest robbers, such as Grackles and Blue Jays, and the sudden disappearance of the songster from the Garden in the middle of the season may possibly be explained by a little tragedy in the tree-top. Where not molested, the Warbling Vireo is one of the most constant singers, remaining musical from its arrival in April till its departure in September with only a short pause in August. A well-grounded fear of feathered nest robbers is in all probability the reason why they like to build their nests near human habitations and have become common residents of villages, towns and the shade trees of frequented streets in large cities.

BELL'S VIREO. *Vireo bellii*.

Not less than three pairs of Bell's Vireo have found an abode in the Garden and have reared broods. Their home is not in

the lofty tree tops with the Warbling Vireo, but in the dense shrubbery of the Synopsis, and their little basket-shaped hang-nests are well hidden, several feet from the ground and protected from above by foliage.

Bell's Vireo looks like a small edition of the Warbling Vireo; in coloration the resemblance is confusing, but besides the smaller size and totally different song it is its habitat which distinguishes it at once. It seldom leaves the deepest recesses of a thicket and even while singing tries to keep out of sight. Its song can not be compared with that of the Warbling Vireo and is inferior to all Vireo songs of our region, but as with other poor singers, it makes up by diligence what it lacks in melody. The song is so short and rapidly emitted that its delivery, although composed of twelve distinct notes, consumes only one second, but by actual timing seventeen deliveries in a minute is no unusual performance and may be kept up for many minutes at a time to be repeated throughout the day. Bell's Vireo has its center of distribution, or what may be called its original home from whence it spread into the Mississippi Valley, on the western plains, and is therefore not put out like most other songsters by our scorching July and August weather, seeming rather to enjoy it, if we can judge by the prolongation of its song period through these months.

YELLOW WARBLER. *Dendroica aestiva*.

This is the wild canary of the boys, or rather one of the two, since the Goldfinch is also called by that name in spite of its black cap and black wings and tail. The Yellow Warbler, also known as Summer Yellowbird, has nothing in common with the Canary except that it is entirely yellow and is of about the same size. While the Canary belongs to the nearly cosmopolitan Sparrow family, the Yellow Warbler is a member of the strictly American insectivorous family of Wood Warblers. Neither in its ways, nor in its voice, has it anything in common with the Canary. Its song is a sprightly, but simple, lay, repeated for hours and days without any modification, but full of indescribable happiness, which fits splen-

didly the blossoming apple trees and young green of the willows, where we hear it first after its return from a winter home in the tropics. Originally an inhabitant of the bramble and hazel thickets along the border of woods and the varied plant growth along water courses, it has with the spread of cultivation adapted itself to the new conditions and is quite at home in our orchards, parks and gardens, where it frequents trees as well as shrubbery. It even seems to seek the friendship of man, but undoubtedly from selfish motives, because a close proximity to man's habitation secures for its nest freedom from undesirable visits from the Cowbird, which has a special fondness for the Yellow Warbler in the choice of foster-parents for its offspring. It has not been ascertained whether this freedom from imposition was enjoyed by the Yellow Warblers of the Garden, but their song which was kept up till the middle of July showed no deviation from their usual cheerfulness.

YELLOW-THROAT. *Geothlypis trichas*.

Yellow-throats like shrubbery in the vicinity of water, and it is for this reason that several pairs find a congenial summer home in the Garden, being particularly fond of the new part, called the Synopsis. Although seldom seen, the presence of the male is not long kept secret, for soon after his arrival in April his loud and peculiar song announces the fact in unmistakable manner. Like all songs of our so-called Warblers it is no warble at all, but a simple, energetic ditty without any modulation and remains in the same individual unchanged throughout the song-period which lasts to the latter part of July, when molt begins. Since molting seems to have a debilitating effect on the general health of birds, they are in no mood to sing, do not even care to utter their call-notes and seek rest in seclusion. After completion of the molt and before their departure in September, the song of the Yellow-throat is again heard for a few weeks, but has nothing of the force of the breeding time, when in the ecstasy of love and happiness excited song-flights are sometimes indulged in. The female, one of the most timid birds, is plain brownish green above and yellowish beneath, but the male

is a little beauty, golden yellow below, bright green above, ornamented by a black mask which is bordered above by gray. Thanks to the modest dress and unobtrusive ways of the female and the caution and foresight with which the Yellow-throats care for their nest, which is so well hidden that even the Cowbirds can not find it easily, the species, with slightly differentiated geographic races, is one of the most abundant Warblers with a breeding range from the Atlantic to the Pacific and from Florida to Labrador and British Columbia.

YELLOW-BREASTED CHAT. *Icteria virens*.

When in May or June you take a stroll through the Synopsis and are suddenly startled by a low whistle in your near neighborhood, as if somebody whistles to his dog, it is very likely a bird of the size of a Tanager, wearing a green coat over a yellow waist, black lores and white eyelids, the Chat, our largest Warbler. If you stop to watch him, you may be quite amused by his queer antics and quaint song. Mounted on top of a tree he will leap into the air and with measured wing beats, raising his wings so high as to touch above, fly with dangling legs and jerky, prancing motion to another tree. When you remain near him, you will be surprised by the variety of notes he has in his repertoire, mostly odd notes in different keys, guttural chucks, humanly whistles and explosive sounds, all of which lead you to think he may be mocking other birds, but they are all his invention. For two months he is one of our noisiest birds, but becomes less and less musical in July, stopping entirely before the end of the month never to be heard again before his departure. When not singing, the Chat is a mysterious bird, for in spite of its large size and bright colors, males and females being alike, it is seldom seen. In addition to its choosing the most impenetrable thickets it has a knack of hiding in their deepest recesses, but is less careful in the location of its nest and often the victim of the Cowbird. Nevertheless the Chat with only one geographic variation, the Long-tailed Chat of the west, has a breeding range extending from the Atlantic to the Pacific and from the Gulf

states to southern Canada, and is a common breeder in Missouri.

MOCKINGBIRD. *Mimus polyglottus*.

St. Louis has been fortunate the last few years in harboring quite a few Mockingbirds within her precincts. In University City there were so many of these songsters in the summer of 1907 that people complained of being kept from sleeping at nights and asked through the newspapers for advice how to get rid of them. Calvary Cemetery, Washington University, Forest Park and Shaw's Garden are among the localities favored by them. More are in the suburbs and in the region of the truck gardeners. Mockingbirds like gardens and build their nests as near as possible to dwellings in a bush or vine, although the whiskered pet of the household is often their undoing, less so of the old ones than of their young just out of nest. The greatest nest robber is man himself and, if not well guarded on private grounds, the young are almost always stolen from the nest by persons who want to raise and sell them. Some catch even the old ones and put them into cages, only to see them pine away and die. As the Mockingbird is partly a permanent resident, pairs are found on their breeding grounds in winter, and in Shaw's Garden the species is one of the few which may be met with in that season. Their song is not heard before March and does not become general before the latter part of April, when those which have left us in fall are returning. May and June is the time when the songsters are in their glory, apparently in great excitement, hopping about, bounding with widely spread tail and wings into the air, or flying from one favorite perch to another, singing all the while. This is the period when singing at night or in the dawn of morning they are said to become a nuisance to persons who prefer sleep to music.

CATBIRD. *Galeoscoptes carolinensis*.

From the twentieth of April to the first of October we are always sure to meet with at least one Catbird in the Garden, but we are more likely to find several of them in the different

parts of the place. During the nesting season we find them near shrubbery and along hedges hopping about on the lawns or between the flowers, diligently looking for entomological specimens, which during summer make up the principal part of their diet. In autumn wild fruit is preferred, and all kinds of berries from Magnolia and Sassafras to Catbrier and Poison Ivy are in demand. While the Catbird may do some harm in places where there is no wild fruit to be had, in the Garden it finds such an abundance and variety of fruit-bearing trees, shrubs and vines, that it does absolutely no harm, but a great amount of good as an indefatigable insect destroyer, though we have not ascertained how many percent of useful insects are among them, taking it for granted, as friends of the bird, that ninety-nine percent are injurious. Formerly it was sufficient to know that a bird lives on insects in order to class it among the benefactors of husbandry, but nowadays the agriculturists want to know what kind of insects it eats, and woe to the poor fellow which is found guilty of partaking too much of predaceous and parasitic insects, spiders and myriapods. The Catbird's song is none of the best, neither in composition nor in execution, but it pleases its author, undoubtedly also his mate, and certainly a great many people who are not too particular but glad to welcome and enjoy all expressions of joy and good cheer, whether highly musical or not. Its cat-like mewing call-note is such a familiar salutation in our rambles that we miss it much when it ceases in the fall.

BROWN THRASHER. *Toxostoma rufum*.

The Mockingbird, Catbird, and Thrasher form a trio of vocal artists of prominence among our Garden musicians and while the first two are more or less imitators of other bird's notes, the Thrasher's song is mostly original composition and such a good one that both cousins borrow largely from it. It is only to be regretted that its song-period is so short. A great songster from its arrival in early April till the last of May, it is only occasionally heard in June and quite silent in July. After the molt we catch sometimes snatches of fine song at half voice coming from deep recesses, but their diet of

astrigent wild fruit does not seem to stimulate them much to poetry and song. Many people call it the Brown Thrush, but it is neither brown nor a thrush, for it belongs with its cousins to the Wren family. Its color is a rich rust-red above and white, tinged with light cinnamon and heavily streaked with brown, below. It differs from the Wood Thrush, with which it is often confounded, by its curved bill and its greater length, nearly one-half of which belongs to the tail. It is terrestrial and rasorial in its habits, often seen half running, half hopping, on the ground in different parts of the Garden. Its usual haunts are open woodland, hedgerows and thickets, and though it makes its home in parks and garden, it does not become so confiding as its cousins, shunning observation as much as possible. Only when singing does it occupy a prominent perch; ascending tree tops and assuming an upright position it floods the air with a flow of melody which is equalled in charm and force by few birds. When startled it utters a peculiar alarm note, that sounds like a smack with the tongue, often followed by a soft, melodious whistle.

HOUSE WREN. *Troglodytes ædon*.

Nooks about the many buildings of the Garden afford several pairs of House Wrens desirable nesting sites, and throughout the summer the little busy-bodies cut a prominent figure in the different divisions of the establishment. Originally the Wren's home was along borders of woods and in the timber fringing water courses, where natural cavities in trees and old woodpecker holes were used for nesting sites. With the advent of settlements the Wren became a companion of man and is now rarely found far away from dwellings during nesting time. Its pert appearance, fearless demeanor, and attractive manners have won the hearts of many people who affectionately call it their Jenny-Wren and treat it with much consideration. In the suburbs of St. Louis it is one of the most familiar birds. Its song is only a short trill, but is delivered with much vivacity and earnestness, while the performer sits upright with drooping tail and thrown-up head, quite different from its usual attitude when it creeps and

dashes about with upraised tail, bowing and bobbing. On the ground it often moves about like a mouse among the flower-pots and plants, and in its constant search for insect food it renders special service by visiting boldly dark and dangerous places where no other bird would dare to go. Like all Wrens it is very inquisitive and greets suspicious objects with loud scolding; well-known foes, like the Cat, are vehemently chided until they quit the vicinity of the nest or young. Since six or seven young are reared in each brood and sometimes even two broods are made, the number of insects destroyed by one pair is simply incalculable and, though spiders form a part, the House Wren must be counted among the most beneficial birds.

WOOD THRUSH. *Hylocichla mustelina*.

From the twentieth of April to the twentieth of July, fully three months, the song of the Wood Thrush can be heard in the Garden every day. For a series of years one pair made its nest in the arboretum in the same tree, a Norway Maple, near the gate. Though the nest may be only twelve feet from the ground, the brooding bird keeps sitting, no matter who passes underneath, or sits down on the bench below. The male is usually not far away singing to her to keep her company. A Wood Thrush sitting on her nest is a lovely picture; her big, calm, intelligent eye appeals mightily to our sympathy as she watches everything that goes on around her, ready to leave, but determined not to forsake her charge until self-preservation shall make it absolutely necessary. Formerly the Wood Thrush was considered a shy denizen of the deep forest, a sort of recluse, but this has changed in the course of time, and it has become a bird which is actually courting the friendship of man and winning it easily by its many good qualities, graceful ways, excellent song and confidence in the best sides of man's nature. In the suburbs of St. Louis it is one of the most familiar birds, who knows the advantages of living on private ground, building its nest within a few yards of the windows of occupied houses. Its glorious song is singularly solemn and serene; the tones, loud and clear, are rising

and falling in rhythmic flow, softly dying away only to swell again to a powerful ring. It is chiefly a ground feeder and sings from the lower branches of a tree, where it also builds its nest, which may be recognized by being saddled with loose material hanging down its sides. Sometimes experiments with novel building material, such as muslin, paper and poultry feathers, are made, but, if used in large quantities, much to the detriment of the structure, which can not stand hard rains as does the old style nest.

AMERICAN ROBIN. *Merula migratoria*.

During eight months of the year, from the beginning of March to the end of October, the well-known Robin greets the visitors to Shaw's Garden either with its peculiar call-note or with its loud song. Several weeks before spring really sets in, this cheering music of less than half a dozen bars, often the only bird notes within hearing, rouses the yet drowsy Nature and announces the approach of another season of warmth, beauty and delight. Throughout March and to the middle of April whole flocks of migrating Robins are sometimes found scattered over the several parts of the Garden and pasture, hopping and running about or resting on trees, calling lustily to each other, and once in a while offering a song. Our own Robins are by this time mated and are building, or, if the weather has not been bad, are already sitting on eggs, while these north-bound guests are still hundreds of miles away from their summer home in the Canadian wilds. At the end of July, when the young are grown, many of the breeding places of the Robin are deserted, but not so Shaw's Garden, which has attraction enough in its plentiful and varied supply of wild fruit to retain its Robins through autumn, but we have to look for them in the Wild Cherry, Magnolia and Sassafras trees, in the Wild Grapes, Virginia Creeper and Greenbriers, in the Dogwood, Elder and Poke bushes, and at last under the Hackberry and Persimmon trees. During September whole troops are sometimes present, and their song which has hardly ever been heard since the middle of July is in the air again, fine old birds in the darkest colors, almost black on

back and deep rufous on the breast, mixed with younger birds of paler gray and palest rufous, and even some in the spotted plumage of the lately fledged with vestiges of babyhood in voice and action.

Visitors.

SPARROW HAWK. *Falco sparverius*.

Although not a breeder in the Garden, the Sparrow Hawk is a fairly common visitor, coming over from the Female Hospital, where it has made its home for many years. Since the English House Sparrows have become so abundant, Sparrow Hawks are permanent residents along the city limits, and visit all the western parts of town on their foraging expeditions. Forest Park, Washington University and University City are some of their headquarters, and single individuals or pairs may be seen there all the year round. Their visits to Shaw's Garden are undoubtedly made in the interest of their larder and do not mean any fondness for the beautiful flowers. Mice and grasshoppers are the main attractions, together with the freedom from persecution, which they do not enjoy everywhere, since no boy in possession of a small rifle can withstand the temptation to use the lovely creature for a target, when it alights on a telephone post in his neighborhood.

BELTED KINGFISHER. *Ceryle alcyon*.

The lake in the new part of the Garden, called the Synopsis of North American flora, is a great attraction for different kinds of birds at all seasons. In fall the Red-shouldered Hawk likes to loaf along its banks, where he has ample opportunity for Nature study, as it is well known that he takes interest in eleven classes of animals, mammals, birds, snakes, frogs, fish, insects, centipedes, spiders, crawfish, earthworms and snails. In migration time short calls are paid to the lake by the Wood Tattler, the Green, Blue and Night Herons, the Coot, Dabchick and several species of Ducks, among them a pair of the rare Red-legged Black Mallard, Dec. 9, 1908. In

spring we find, stopping for a little hunt, five different kinds of swallows and other insectivorous birds, attracted by the abundance of food, which a sheet of water offers when the dry land is barren. Another kind of attraction causes the more or less regular visits of a pair of Kingfishers, which have probably miles to fly from their nest to reach these quiet hunting grounds for a few nice, healthy minnows taken out of that fresh cool water. A Kingfisher in its white and blue livery with the high crest and long bill is an ornament to any landscape and makes a picture worthy of the photographer's art who may catch him as he sits watching on some overhanging branch, or hovering over the water, or swooping down upon his prey, or emerging and making off with his finny game. Equally characteristic as his queer top-heavy shape and long-winged, rapid and direct flight is his loud rattling call, which fits so well the bird and his picturesque surroundings.

NIGHTHAWK. *Chordeiles virginianus*.

On cool days in summer, when a high pressure of dry air is accompanied by a sudden fall in temperature, insect life becomes greatly affected, and especially the winged insects remain dormant in seclusion, thus producing a temporary scarcity of food for certain birds which depend for their subsistence on insects which they can catch on the wing, chiefly the Nighthawks, Swifts, Flycatchers and Swallows. The only place where such insects are found in sufficient numbers on those days, is the surface of rivers and lakes, because the water is then warmer than the air, and evaporation supplies the air above the water with the moisture, which is so necessary to insect life. Most of the insects found on these days, such as Dragon and Damsel flies, May or Day flies and the great army of midges, gnats and mosquitoes, are born in the water and remain near it; others do not even leave its surface, such as the long-legged Water-striders and the social Whirligigs, and may be picked up by the flying bird.

The Nighthawks which are seen over the lake on such occasions, may have their two eggs or young far away on the roof of a high building in the city, for the flight of this long-

winged aerial acrobat is not measured by our miles, hundreds of which he daily traverses without effort in his ordinary vocation of gnat consumer. Thousands of gnats and midges are found buried in the stomach of this useful bird, whose capacious mouth is coated with a sticky saliva enabling him to capture scores of the minute insects by a single sweep with open mouth through a cloud of them.

RUBY-THROATED HUMMINGBIRD. *Trochilus colubris*.

Since the cold spring of 1907 Hummingbirds are not so common as they used to be. Birds are all more or less subject to numerical changes, brought about by a variety of agencies. A few heavy downpours of rain in June, killing the tender young, will greatly reduce the number of a species in a section of the country, as with such short-lived creatures as small birds the omission of one year's progeny would reduce the number of those returning to us the following spring by at least one-third. Especially the insectivorous birds, to which we must count the Hummer in spite of its fondness for nectar, suffer by a cool summer. Swallows and Swifts are sometimes visibly reduced, the latter chiefly by continuous rains at the time when they have small young in their frail nest, which, only glued to the wall, is loosened by the rain and falls with its contents to the bottom of the chimney.

Hummingbirds are not known to nest in the Garden, but become common among its flowers in the latter part of July, when migration from the north begins to reach us. Stopping in favorite places, they drift leisurely southward, spending three months in the transit through the United States. The males, traveling faster than the females and young ones, are nearly all gone by the middle of September, but the last of the species do not leave St. Louis before October. The drought of the summer and fall of 1908 caused earlier departure than usual, when nectar and insects became scarce and the flowers themselves withered. Jewel weed, usually a great favorite till October, had no attraction after the middle of September. As the red pollen of the Red Buckeye leaves an imprint on the Hummingbird's throat in early spring, so does

the Jewel weed cause the strangely white forehead by its sticky white pollen.

PURPLE MARTIN. *Progne subis*.

If bird houses were put up in the Garden, the Martins would undoubtedly accept them with thanks, for nesting facilities are not too common in St. Louis, and open places like the synopsis are always preferred to narrow city yards. The best bird houses are the inexpensive square boxes with a hinged lid or rather two lids, nailed together; one which fits tightly, the other a slanting roof. This arrangement not only sheds the rain, but lessens the heat in the box which under a single roof becomes unbearable. Ornamental houses with from ten to sixty rooms are offered for sale by manufacturers of bird-houses, but for various reasons single room houses are preferred by the writer, who has a long experience with Martin colonies, having had at one time a colony of forty pairs in the city. The occupants of single-room houses are easily watched and when it becomes necessary to remove a sparrow's nest, it can be done without disturbing others. Good boxes can be made of one-inch white pine boards, well painted, a good size for the room inside is ten by ten inches and six inches high; the entrance, two inches square, must open on the floor, which protrudes four inches to form a porch. On open ground twelve feet from the ground is high enough, in narrow city yards sixteen feet is better. For a pole a two-by-four yellow pine sixteen-foot scantling can be used setting it three to four feet in the ground after soaking the bottom part in crude carbolic acid or hot tar. A colony may be started with one pole holding two boxes, side by side or on opposite sides, and the number of poles may be increased as the colony grows larger from year to year. If the boxes are not occupied the first year, they will surely be the second year. Martins are sometimes afraid of new boxes, but once accustomed to them, they and their progeny return every year.

CEDAR WAXWING. *Ampelis cedrorum*.

The Cedarbird, as this bird is commonly called, is a visitor of the Garden in early summer. When about the first of

June the fruit of the large White Mulberry tree near the main entrance begins to ripen, troops of thirty or more pay short but numerous visits to it for a whole week without drawing the attention of the visitors of the Garden, for they come silently and go silently or nearly so, emitting only a fine lisping note, easily missed. While feeding they are perfectly still, knowing that they are trespassing. No harm is done on White Mulberry trees, as their fruit is insipid and not eaten by man, but when they invade the early cherry trees, they can do real damage by spoiling much more than they eat, returning to the same tree day after day, even hour after hour, if not scared away by shooting blank cartridges. Mulberry trees, both the White and the Red, should be planted in profusion in gardens, parks and orchards, where they would draw fruit-eating birds away from the cherries ripening at the same time. Birds have had their wild fruit in plenty before the white man came and cut down the trees, shrubs and vines, which supplied them. Now it seems our duty, in justice to our fellow-creatures, to return, in part at least, what has been taken from them, by growing many different kinds of fruit-bearing plants, combining the useful with the pleasing, since they are ornamental, hardy trees, shrubs and vines, easily raised from seeds.

EXPLANATION OF PLATE 1.

Above, male (at left) and female European Tree Sparrow; below, male (behind) and female House Sparrow: two-thirds natural size.